CHAPTER 3

KC-130 TACTICAL SYSTEMS OPERATOR (TSO)/MISSION SPECIALIST
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CHAPTER 3

KC-130 TACTICAL SYSTEMS OPERATOR (TSO)/MISSION SPECIALIST

300. MARINE AERIAL REFUELING SQUADRON (KC-130FRT) UNIT CORE COMPETENCY

UNIT TEMPLATE

NOTE

The capabilities defined and described in the core capability and unit template sections are provided to ensure each like squadron maintains a common base of training and depth of capabilities. When resources permit, and when in the judgment of the commander additional training would significantly increase the unit's war fighting capability, training to a level above these base capabilities is permitted. It is incumbent upon, and expected of, the commander to balance any increase in the depth of core capabilities against the overall health and readiness of his unit while staying within his resource constraints.

1. VMGR Mission. Support the MAGTF Commander by providing aerial refueling and assault support, day or night under all weather conditions during expeditionary, joint, or combined operations.

2. Mission Essential Task List (METL)

a. (UJTL TA 1.1.1) Conduct Tactical Airlift
- Conduct assault support transport.

b. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations
- Maintain the capability to deploy and operate from advanced bases, expeditionary airfields and forward operating bases.
- Perform organizational maintenance on assigned aircraft.

c. (UJTL TA 1.2.2) Conduct Airborne Operations
- Provide air delivered assault support transport of combat troops, equipment and supplies.
- Provide support for casualty evacuation operations.
- Maintain self-defense capability from ground-to-air and air-to-air threats.

d. (UJTL TA 4.2) Distribute Supplies and Provide Transport Services
- Conduct aerial re-supply.
- Provide support for mobile Forward Arming and Refueling Points (FARPS).
- Provide support for Rapid Ground Refueling (RGR) of aircraft and vehicles.

e. (UJTL TA 4.2.3) Conduct Air Refueling
- Provide Tactical and Long Range Aerial Refueling.

f. (UJTL TA 5) Exercise Command and Control
- Provide Airborne Platform for the Airborne DASC Command Post.

g. (UJTL TA 6.2) Conduct Joint Personnel Recovery
- Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.
- Augment local Search and Rescue (SAR) assets

h. (UJTL TA 6.4) Conduct Noncombatant Evacuation
- Provide support for evacuation operations.

3. Table of Organization. Refer to Table of Organization 8820 and 8821 managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for KC-130F/R/T units. As of this publication date, KC-130F/R/T units are authorized:

Squadron
12 Aircraft
42 Pilots [26 TPC/16 CP (T2P or T3P)]
23 Tactical System Operators
25 Flight Engineers
24 Loadmasters
24 Flight Mechanics

Detachment
6 Aircraft
19 Pilots [11 TPC/8 CP (T2P or T3P)]
11 Tactical System Operators
12 Flight Engineers
12 Loadmasters
12 Flight Mechanics

4. Core Capability. A core capable squadron is able to sustain 9 sorties on a daily basis during contingency/combat operations. The above sortie rates are based on 3.0 hour average sortie duration and assumes $\geq$ 70 percent FMC aircraft and $\geq$ 90 percent T/O aircrew on hand. If unit FMC aircraft < 70 percent or T/O aircrew < 90 percent, core capability will be degraded by a like percentage. A core capable squadron is able to accomplish all tasks designated in the unit METL from a main or expeditionary base.

5. METL/Core Skill Matrix. KC-130FRT core skills directly support the METL as follows:

	KC-130FRT CORE SKILL										CORE PLUS	
METL	AR	TACNAV	FORM	RGR	LRNAV	THRX (I)	THRX (R)	ALZ	NSQ	AD	LRAR	DEFTAC
A. Conduct Tactical Airlift		X	X		X	X	X	X	X			X
B. Conduct Sea and Air Deployment Operations			X		X	X	X	X	X		X	X
C. Conduct Airborne Operations		X	X		X	X	X		X	X		X
D. Distribute Supplies and Provide Transport Services		X		X	X	X	X	X	X	X	X	X
E. Conduct Air Refueling	X	X	X		X	X	X		X		X	X
F. Exercise Command and Control					X	X	X		X			X
G. Conduct Joint Personnel Recovery	X	X	X	X	X	X	X	X	X	X	X	X
H. Conduct Noncombatant Evacuation	X	X	X	X	X	X	X	X	X		X	X

6. KC-130F/R/T Core Model Minimum Requirements. Squadron core competency reflects the minimum level of competency a squadron must achieve to perform its core capability. Squadron core competency is measured in terms of minimum Core Skill Proficiency (CSP) and minimum numbers of flight leaders per paragraphs a. and b. below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (Unit CSP). In order to be considered proficient in a core skill (individual CSP), a crewmember must attain and maintain proficiency in core skill events, as delineated in paragraphs (1) and (2) below.

* NOTE: DEFTAC and Long Range AAR (LRAR) are core plus skills. Proficiency in DEFTAC and LRAR is not required to obtain unit CSP and will not contribute to unit T-level readiness. Below are KC-130 community recommended unit/individual CSP standards for these skills.

KC-130FRT Unit CSP Requirements							
CORE SKILL *CORE PLUS	Pilot	Co-pilot	TSO	FE	LM	FM	Crews
AR	14	14	14	14	14	14	14
TACNAV	9	9	9	9	9	9	9
FORM	8	8		8			8
LRNAV	12	12	12	12	12	12	12
THRX(I)	6	6	6	6	6	6	6
THRX(R)	8		4	4			4
ALZ	9	9	9	9	9	9	9
RGR	6	6		6	6	6	6
NSQ	9	9	9	9	9	9	9
AD	4	4	4	4	8	4	4
**CPL					18		18
*LRAR	2		2				1
*DEFTAC	2/2		2	2	2	2	2

KC-130FRT Unit CSP Requirements Detachment							
CORE SKILL	Pilot	Co-Pilot	TSO	FE	LM	FM	Crews
AR	7	7	7	7	7	7	7
TACNAV	5	5	5	5	5	5	5
FORM	4	4		4			4
LRNAV	6	6	6	6	6	6	6
THRX(I)	3	3	3	3	3	3	3
THRX(R)	4		2	2			2
ALZ	5	5	5	5	5	5	5
RGR	3	3	3	3	3	3	3
NSQ	5	5	5	5	5	5	5
AD	2	2	2	2	4	2	2
**CPL					9		9
LRAR	1		1				1
DEFTAC	4		2	2	2	2	2

** CPL is the Cargo and Passenger Loading core skill that applies to loadmasters only and is not included in the METL Core Skill Matrix.

(1) Events Required to Attain Individual CSP. To initially attain CSP, a crewmember must successfully complete all of the T&R events listed in the chart below for that core skill:

KC-130 TSO	RW/FW AR	RGR	ALZ EAF	AD	FORM	LONG RANGE NAV	TACNAV	THRX(I)	THRX(R)	NS	LRAR	DEFTAC
T&R event requirements to attain competency	210 212 213		270 271 370	240 241 242 341		250	220 221 222 223 321 322 324	260 261	360 361	201 204 205	410 411	462

(2) Events Required to Maintain Individual CSP. To maintain CSP, a crewmember must maintain proficiency in all of the T&R events listed in the chart below for that core skill.

KC-130 TSO	RW/FW AR	RGR	ALZ EAF	AD	FORM	LONG RANGE NAV	TACNAV	THRX(I)	THRX(R)	NS	LRAR	DEFTAC
T&R event requirements to attain competency	210 213		271 370	241 242		250	223 322 324	261	361	204 205	411	462

b. Minimum Combat Leader Requirements. As a minimum, in order to be considered Core Competent, a unit must posses the following numbers of aircrew with the listed flight leadership designations.

	KC-130 Leadership Requirements - Squadron					
DESIGNATION	Pilot	Tactical Systems Operator	Flight Engineers	Loadmasters	Flight Mechanics	
TPC	18					
SEC LDR	8					
DIV LDR	4					
TAC RAC	8					
RC		2				
STRAT RAC	2					

	KC-130 Leadership Requirements - Detachment					
DESIGNATION	Pilots	Tactical Systems Operator	Flight Engineers	Loadmasters	Flight Mechanics	
TPC	9					
SEC LDR	4					
DIV LDR	2					
TAC RAC	4					
RC		1				
STRAT RAC	1					

7. Qualifications And Designations Table. The table below delineates T&R events required to be completed to attain initial qualifications, re-qualifications, and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding

officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification.

Qualification (TRACKING CODE)	Initial Event Qualification Requirements.
NSQ (600)	NSFAM-204, NSFAM-205
TSOI (601)	TSOIUT 500, 501, 502 and squadron's recommendation for instructor designation.
NSI (602)	NSIUT 510, 511, 512 and MAWTS-1 certification.
RENDEZVOUS CONTROLLER (610)	AR-410, AR-411
ANNUAL NATOPS (690)	IAW OPNAVINST 3710.7_ and an annual qualification letter signed by the commanding officer.
Weapons and Tactics Instructor (691)	Completion of WTI Course of instruction and MAWTS-1 certification.
NATOPS Instructor (692)	RQD 601 and squadron's recommendation for NATOPS evaluator designation.

	KC-130 Squadron					
INSTRUCTOR DESIGNATION	Pilots	Tactical System Operators	Flight Engineers	Loadmasters	Flight Mechanics	
LATI	4					
ANI	6	4	6	4		
WTI	2	2	2	2		
DEFTACI	1					
NSI	3	3	3	3		
T&RI	10	6	10	8		

	KC-130 Detachment					
INSTRUCTOR DESIGNATION	Pilots	Tactical System Operators	Flight Engineers	Loadmasters	Flight Mechanics	
LATI	2					
ANI	3	2	3	2		
WTI	1	1	1	1		
DEFTACI	1					
NSI	1	1	1	1		
T&RI	5	3	5	4		

8. Definitions

a. Currency. A control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of Combat Readiness Percentage (CRP). For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for individual type mission profiles can be found in the Aviation T&R Program Manual.

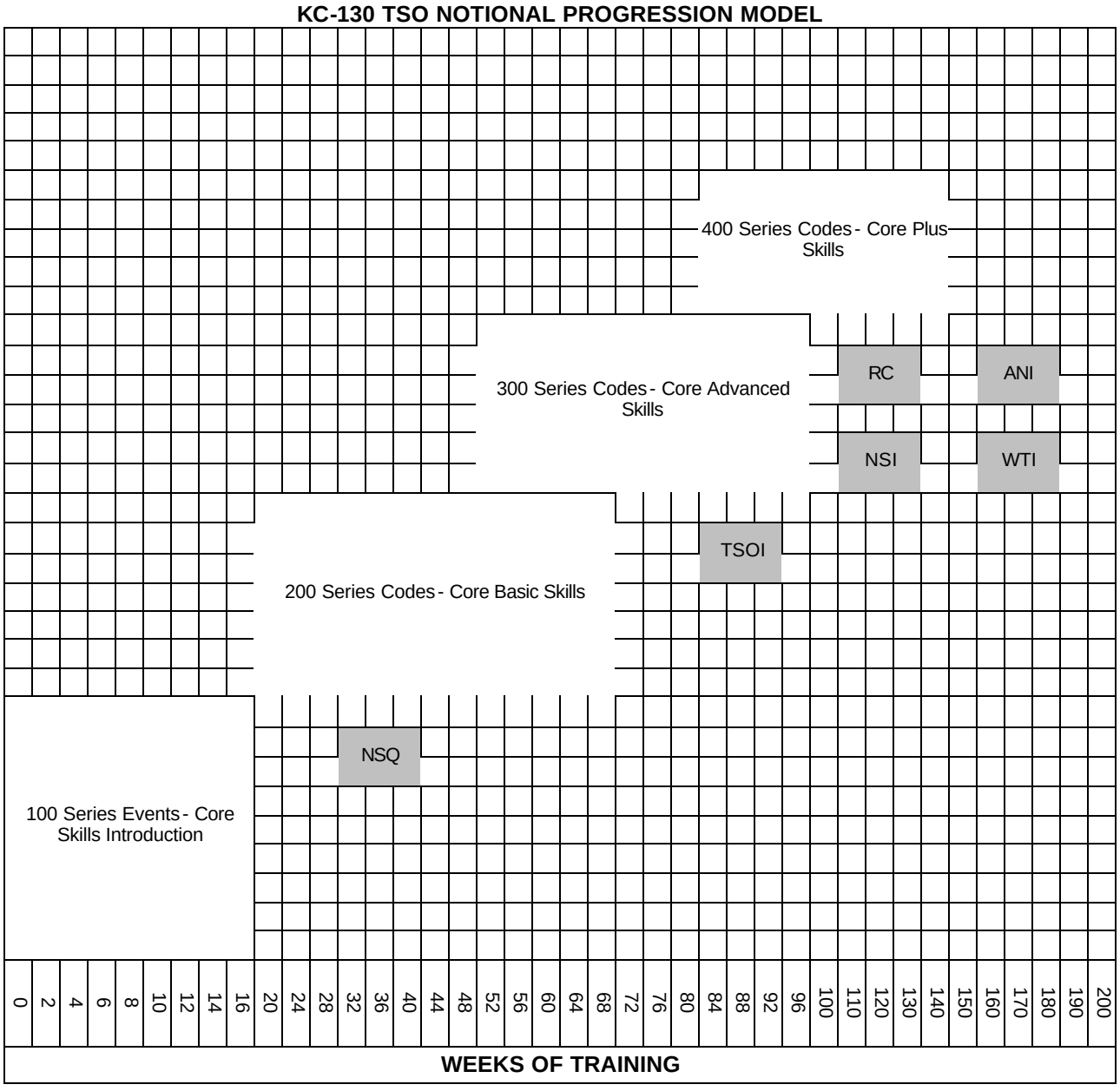
b. Proficiency. Proficiency is a measure of achievement of a specific skill. Re-fly factors establish the maximum time between demonstration of those particular skills. CRP is a measurement of “demonstrated proficiency.” If an aircrew exceeds the re-fly factor for a particular event, the individual loses CRP for that particular event. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with instructors from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another aircraft commander or as designated by his commanding officer.

c. Qualification. A qualification is a status assigned to personnel based on demonstration of proficiency in a specific skill. Specific criteria to achieve qualifications shall be delineated in individual T&R chapters. Upon successful completion of qualification criteria, commanding officers may issue an appropriate qualification letter for inclusion in the NATOPS jacket and APR/MPR. Aircrew do not lose a qualification as a function of re-fly factor for individual events. Loss of proficiency (delinquent re-fly factor) for all associated qualification core skill events constitutes loss of that qualification. Re-qualification requires demonstration of proficiency. Specific re-qualification criteria shall be delineated in individual T&R chapters.

d. Designation. A designation is a status assigned to an individual based on leadership ability. A designation is a command specific, one-time occurrence and remains in effect until removed for cause. Specific designation requirements shall be delineated in individual T&R chapters. Commanders shall issue a designation letter to the individual upon the occasion of original designation, with appropriate copies for inclusion in the NATOPS jacket and APR.

9. KC-130FRT TSO Progression Model. The training progression model below provides recommended core skill, qualification, and designation attainment timelines.

KC-130 TACTICAL SYSTEMS OPERATOR (TSO)/MISSION SPECIALIST NOTIONAL PROGRESSION MODEL



301. PROGRAMS OF INSTRUCTION (POI) FOR BASIC TSO

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Squadron Ground Training	Training Squadron
3-16	Core Skill Introduction Training	Training Squadron
16-68	Core Skill Basic Training	Tactical Squadron
52-96	Core Skill Advanced Training	Tactical Squadron
88-140	Core Plus Training	Tactical Squadron

302. POI FOR REFRESHER TSO

WEEKS	COURSE/PHASE	ACTIVITY
1	Squadron Ground Training	Training Squadron
2-3	Core Skill Basic Training	Training Squadron

310. GROUND TRAINING COURSES OF INSTRUCTION

COURSE/PHASE	ACTIVITY
Naval Aircrew Candidate Course	NAS Pensacola, FL
Marine Aerial Navigators School	Randolph AFB, TX
Survival, Evasion, Resistance and Escape School	NAS Brunswick, ME
Central Altitude Reservation Facility Indoctrination ARTCC Facility	Washington D.C.
Weapons Tactics Instructor (WTI)	MAWTS-1, MCAS Yuma, AZ
Advanced Airlift Tactics Training Course	St Joseph, MO
Combat Air Platform Employment Seminar (CAPES)	Nellis AFB, NV

311. SQUADRON LEVEL TRAINING

Aircraft, Emergency Equipment, and Emergency Procedures Familiarization
Foreign Clearance Guide Review
Mission Planning and Fuel Requirements Review
Radio Navigation and Flight Instruments and RADAR Techniques Review
Aerial Refueling Review
Low Level Navigation Techniques Review
Computer Mission Planning Systems
TSO's Responsibility During Ground/Airborne Emergencies
NATOPS Open Book Examination
NATOPS Closed Book Examination

320. FLIGHT/SIMULATOR/EVENT TRAINING. The number of hours depicted in the flight training syllabus are considered to be the optimum instructional hours necessary to accomplish training objectives for each flight.

321. BASIC TSO TRAINING

1. Core Skill Introduction Training

STAGE	EVENTS FLT/SIM	HOURS FLT/SIM	CRP FLT/SIM
Basic Qualification	-	-.-	25.0
Ground Familiarization	0/0	2.0/0.0	0.0/0.0
Overland Familiarization	4/0	8.0/0.0	6.0/0.0
Aerial Refueling Familiarization	3/0	6.0/0.0	9.0/0.0
Low Level Familiarization	3/0	3.0/0.0	9.0/0.0
ICAO/Non-RADAR Navigation	2/0	10.0/0.0	4.0/0.0
TSO Check	1/0	2.0/0.0	7.0/0.0
Total	**13/0**	**31.0/0.0**	**60.0**

2. Core Skill Basic Training

STAGE	EVENTS FLT/SIM	HOURS FLT/SIM	CRP FLT/SIM
Familiarization	3/0	10.0/0.0	3.0/0.0
Aerial Refueling	3/0	6.0/0.0	4.5/0.0
Tactical Navigation	2/2	4.0/4.0	2.0/0.0
Aerial Delivery	2/1	3.0/1.5	2.0/0.0
Long Range Navigation	1/0	5.0/0.0	0.5/0.0
Threat Reaction	1/1	2.0/2.0	1.5/0.0
EAF/ALZ	1/0	1.5/1.5	1.5/0.0
Total	**13/4**	**31.5/9.0**	**15.0**

3. Core Skill Advanced Training

STAGE	EVENTS FLT/SIM	HOURS FLT/SIM	CRP FLT/SIM
Tactical Navigation	3/0	4.0/0.0	9.0/0.0
Aerial Delivery	1/0	1.5/0.0	3.0/0.0
Threat Reaction	1/1	2.0/2.0	4.0/0.0
EAF/ALZ	1/0	1.5/0.0	4.0/0.0
Total	**6/1**	**9.0/2.0**	**20.0**

4. Core Plus Training

STAGE	EVENTS FLT/SIM	HOURS FLT/SIM	CRP FLT/SIM
Aerial Refueling	2/0	6.0/0.0	1.5/0.0
Tactical Navigation	1/0	2.0/0.0	0.7/0.0
Aerial Delivery	3/0	3.0/0.0	2.1/0.0
DEFTAC	1/0	1.5/0.0	0.7/0.0
Total	**7/0**	**12.5/0.0**	**5.0**
TOTAL	**39/5**	**84.0/11.0**	**100.0**

5. Refresher Tso Training

STAGE	EVENTS FLT/SIM	HOURS FLT/SIM
Familiarization	4/0	12.0/0.0
Aerial Refueling	2/0	4.0/0.0
Tactical Navigation	3/0	5.0/0.0
Aerial Delivery	3/0	4.5/0.0
Long Range Navigation	2/0	10.0/0.0
Threat Reaction	2/0	4.0/0.0
EAF/ALZ	2/0	3.0/0.0
NATOPS Check	2/0	4.0/0.0
TOTAL	**20/0**	**46.5/0.0**

6. Instructor Under Training (Iut)

STAGE	EVENT FLT/SIM	HOURS FLT/SIM
TSO Instructor	3/0	9.0/0.0
Night System Instructor	3/0	4.5/0.0

Advanced Airlift Tactics Training Course (AATTC), St. Louis, MO.
Combat Air Platform Employment Seminar (CAPES), Nellis AFB, NV.

330. EVENT PERFORMANCE REQUIREMENTS

1. Route Selection. Route selection should offer maximum variations in en route conditions.

2. Crew Seat. The trainee is required to occupy the TSO's position in the flight station on all syllabus training flights.

3. Refly Intervals. Syllabus refly intervals can be located in Figure 3-2. Core Skill Introduction events (100 series) are one-time events and are not repeated. A TSO returning from a DIFDEN tour exceeding 12 months should complete the refresher syllabus.

4. Crew Resource Management (CRM). A qualified and designated CRM Instructor shall conduct initial CRM Training. Annual CRM Training shall be conducted IAW OPNAVINST 1542.7. CRM shall be briefed for all flights and/or events.

5. Simulator Training. Approved IFARS WST simulators are contained in OPNAVINST 3710.7_. If an approved simulator is not available, then the simulator events are not required for stage training completion.

6. Event Conditions. Flights annotated with an N shall be flown at night without NVDs. Flights annotated with an (N) may be flown at night without NVDs. Flights annotated with an NS shall be flown at night utilizing NVDs. Flights annotated with an (NS) may be flown at night utilizing NVDs.

331. CORE SKILL INTRODUCTION TRAINING

1. General

a. Ground Familiarization. Ground familiarization shall be completed prior to beginning the Familiarization stage. At the end of this stage of training the trainee will be:

(1) Able to perform a pre/post-flight of the KC-130.

(2) Able to demonstrate the proper use of all emergency equipment and procedures Per Part V of the KC-130 NATOPS manual.

(3) Familiar with current FLIP and FCG procedures.

2. Familiarization

a. Purpose. Familiarize the TSO trainee with the location and operation of navigation equipment aboard the KC-130 aircraft and associated publications. Introduce publications, forms, and procedures relative to airways/random route flying. Specifically, at the end of this stage the trainee will be able to:

(1) Perform a complete pre/post-flight of the aircraft navigation equipment and publications.

(2) Understand and use current flight information publications, en route charts, and airways logs.

(3) Select the best route of flight by means of weather analysis. Properly complete and file the DD-175 form.

(4) Understand basic radio/ICS procedures and obtain flight clearances by UHF/VHF radio.

(5) Understand basic RADAR operation with ground and weather interpretation.

(6) Use the ADF, VOR, TACAN, GPS, and INS as navigational aids.

(7) Explain/perform emergency procedures on all sorties as they pertain to the TSO.

(8) File a flight plan with and obtain a weather briefing from a Flight Service Station via phone or UHF/VHF radio.

(9) Understand crew coordination and the duties of the TSO as a crewmember of the aircraft.

b. General. Current planning procedures as defined in current flight publications shall be utilized.

(1) Trainee will receive a minimum of two cross-country flights to an airfield more than one hour from home station. During these missions the trainee will be required to file a flight plan and obtain a weather brief at destination airfield.

(2) Current planning procedures as defined in current flight publications shall be utilized.

c. Ground Training. Trainee will have completed the required ground training, to include Crew Resource Management Training, prior to the first flight.

d. Flight Training (4 Flights, 8.0 Hours)

FAM-100 2.0 1 KC-130 A

Goal. Introduce the trainee to all KC-130 overland duties.

Requirement. Perform a complete pre/post-flight inspection of the aircraft navigation equipment and publications. Understand and use current flight information publication en route charts and airways log.

Performance Standard. Per NATOPS, FLIP, Squadron SOP, OPNAVINST 3710.7_ and FRS Student Flight Guide.

Prerequisite. Complete ground instruction and receive aircraft familiarization training.

Ordnance. None.

External Syllabus Support. None.

FAM-101 2.0 1 KC-130 A

Goal. Familiarize the trainee with all KC-130 overland navigation aids and duties.

Requirement. Obtain a DD-175-1 weather brief. Select the best route of flight by means of weather analysis. Properly complete and file a DD-175 flight plan. Obtain flight clearance via UHF/VHF radio. Explain the requirements and procedures for an emergency ground evacuation. Understand the basic RADAR operation with ground and weather interpretation. Demonstrate and refine training included in FAM-100.

Performance Standard. Per NATOPS, FLIP, Squadron SOP, OPNAVINST 3710.7_ and FRS Student Flight Guide.

Prerequisite. 100

Ordnance. None.

External Syllabus Support. None.

FAM-102 2.0 R 1 KC-130 A

Goal. Refine KC-130 TSO skills and responsibilities.

Requirement. Understand basic ICS/radio procedures. Use ADF, VOR, TACAN, INS, and GPS as navigation aids. Explain the TSO's duties during all in-flight emergencies. Explain and perform the procedures for all in-flight and ground emergencies. Demonstrate mission planning ability to include: fuel planning, departure/destination alternates, and weather minimum criteria. Demonstrate and refine training contained in FAM-100 and FAM-101.

Performance Standard. Per NATOPS, FLIP, Squadron SOP, OPNAVINST 3710.7_ and FRS Student Flight Guide.

Prerequisite. 101

Ordnance. None.

External Syllabus Support. None.

FAM-103 2.0 R, E 1 KC-130 A

Goal. Qualify the trainee to fly local overland non-tactical training missions without an instructor TSO aboard the aircraft.

Requirement. Perform overland navigation flight planning and crew duties. Understand crew coordination and the duties of the TSO as a crewmember in the aircraft. The trainee shall have flown two cross-country flights and demonstrated the ability to identify and avoid hazardous weather during this stage of training.

Performance Standard. Per NATOPS, FLIP, Squadron SOP, OPNAVINST 3710.7_ and FRS Student Flight Guide.

Prerequisite. 102

Ordnance. None.

External Syllabus Support. None.

3. Aerial Refueling

a. Purpose. To introduce the TSO trainee to air-to-air refueling procedures, mission planning, and crew coordination. At the end of this stage the trainee will be able to perform TSO duties associated with local refueling missions above 5,000 ft AGL.

b. General

(1) The trainee will observe the refueling mission from the TSO's position and from the observer's position.

(2) Flights should be accomplished in local refueling areas.

(3) Introduce all appropriate navigation aids (APX, Air-to-Air TACAN, UHF/DF) and join-up procedures.

c. Ground Training. Trainee will review the Aerial Refueling Class prior to this stage.

d. Flight Training (3 Flights, 6.0 Hours)

AR-110 2.0 1 KC-130 A

Goal. Introduce fixed wing air-to-air refueling procedures.

Requirement. On local refueling missions, the trainee will observe air-to-air refueling procedures and maintain the aircraft's position.

Performance Standard. Per NATOPS, Air-to-air refueling Manual, and FRS Student Flight Guide.
Prerequisite. 103

Ordnance. None.

External Syllabus Support. Fixed-wing receivers required.

AR-111 2.0 1 KC-130 A

Goal. Introduce helicopter air-to-air refueling procedures.

Requirement. On local refueling missions, the trainee will observe helicopter air-to-air refueling procedures and maintain the aircraft's position.

Performance Standard. Per NATOPS, Air-to-air refueling Manual, and FRS Student Flight Guide.

Prerequisite. 103

Ordnance. None.

External Syllabus Support. Rotary-wing receivers required.

AR-112 2.0 1 KC-130 A

Goal. Refine air-to-air refueling procedures.

Requirement. On local refueling missions, the trainee will observe air-to-air refueling procedures and maintain the aircraft's position.

Performance Standard. Per NATOPS, Air-to-air refueling Manual, and FRS Student Flight Guide.

Prerequisite. 110 and 111

Ordnance. None.

External Syllabus Support. Fixed-wing or rotary-wing receivers required.

4. Low Level Navigation

a. Purpose. To introduce the trainee to low level navigation. At the end of this stage the trainee will be able to:

(1) Construct a low level chart per current procedures and directives.

(2) Maintain the aircraft's position and direct the aircraft on a low level route utilizing terrain and cultural features.

(3) Act as the primary TSO utilizing all available internal navigation equipment during one low level syllabus flight.

b. General

(1) Training shall be conducted in VMC.

(2) All flights will be flown in accordance with T&R Manual, Administrative altitude criteria.

(3) Emphasis shall be placed on position awareness and time control.

c. Ground Training. Trainee must have completed the Low Level Navigation Techniques Review prior to this stage.

d. Flight Training (3 Flights, 3.0 Hours)

LL-120 1.0 1 KC-130 A

Goal. Introduce TSO responsibilities on low level missions.

Requirement

(1) Familiarize trainee with low level navigation utilizing terrain, cultural features, NAVAIDs, and with TSO duties.

(2) The low level route shall consist of a minimum of 6 pre-selected points.

Performance Standard. Per TACMAN, AIRNAVMAN, and FRS Student

Flight Guide.
Prerequisite. 103

Ordnance. None.

External Syllabus Support. None.

LL-121 1.0 1 KC-130 A

Goal. Refine TSO responsibilities on low level missions.

Requirement

(1) Familiarize trainee with all low level navigation aids and TSO duties.

(2) The low level route shall consist of a minimum of 6 pre-selected points.

Performance Standard. Per TACMAN, AIRNAVMAN, and FRS Student Flight Guide.

Prerequisite. 120

Ordnance. None.

External Syllabus Support. None.

LL-122 1.0 1 KC-130 A

Goal. Perform low level planning and act as the primary TSO while navigating a low level mission.

Requirement

(1) Refine training included in LL-120 and LL-121.

(2) The low level route shall consist of a minimum of 6 pre-selected points.

Performance Standard. Per TACMAN, AIRNAVMAN, and FRS Student Flight Guide.

Prerequisite. 121

Ordnance. None.

External Syllabus Support. None.

5. ICAO/Non-RADAR Familiarization

a. Purpose. To provide the trainee an opportunity to develop the proficiency and confidence required for safe extended ICAO/Non-RADAR flight. Specifically, at the end of this stage the trainee will be able to:

(1) Integrate all available navigation aids.

(2) Use the aircraft's RADAR for fixing and/or weather avoidance.

(3) Correctly determine the required fuel load, ensuring fuel consumption and corresponding progress toward destination are within safe limits.

b. General

(1) Flights shall be accomplished during flights in an ICAO environment on a multi-national itinerary with a minimum of one 5-hour route each.

(2) Flights will be designed to allow the trainee to develop proficiency and practice integrating all available navigational aids.

c. Ground Training. Trainee will review all classes relating to navigation in an ICAO/non-RADAR environment.

d. Flight Training (2 Flights, 10.0 Hours)

ICAO-150 5.0 1 KC-130 A (N)

Goal. Integrate all available navigation aids emphasizing INS and GPS operations in a global environment.

Requirement. The trainee will demonstrate the ability to perform mission planning in an ICAO environment and to determine the aircraft's position within FLIP tolerances.

Performance Standard. Per NATOPS, FLIP, ICAO, and FRS Student Flight Guide.

Prerequisite. 103

Ordnance. None.

External Syllabus Support. None.

ICAO-151 5.0 R 1 KC-130 A (N)

Goal. Integrate all available navigation aids emphasizing INS and GPS operations in a global environment.

Requirement. The trainee will demonstrate the ability to perform mission planning in an ICAO environment and to determine the aircraft's position within FLIP tolerances.

Performance Standard. Per NATOPS, FLIP, ICAO, and FRS Student Flight Guide.

Prerequisite. 150

Ordnance. None.

External Syllabus Support. None.

6. TSO Check

a. Purpose. To determine that the trainee has achieved the minimum NATOPS requirements as a TSO aboard the KC-130 aircraft.

b. General

(1) A designated KC-130 TSO NATOPS Instructor shall evaluate this flight.

(2) Upon completion, the trainee will be designated as qualified and receive the MOS 7372.

c. Ground Training. Trainee must successfully complete the NATOPS open and closed book examinations prior to this flight.

d. Flight Training (1 Flight, 2.0 Hours)

TSOCK-190 2.0 R, E 1 KC-130 A (N)

Goal. Qualify the trainee as a Core Skill Introduction complete TSO in the KC-130 aircraft.

Requirement. The trainee shall demonstrate the ability to meet the NATOPS requirement for a Combat Capable TSO aboard the KC-130 aircraft.

Performance Standard. Per NATOPS, FLIP, and FRS Student Flight Guide.

Prerequisite. 112, 122, and 151

Ordnance. None.

External Syllabus Support. None.

332. CORE SKILL BASIC TRAINING

1. General

a. This phase of instruction trains the TSO in basic core skills to include: NSQ, AR, TACNAV, AD, LRNAV, THRX(I), and ALZ.

b. The TSO under instruction shall receive the appropriate MAWTS-1 Course Catalog Academic Support Package (ASP) lectures prior to the appropriate stage of training.

c. For AR-210, AR-213, and ALZ-271, a TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI who is NSQ may instruct an NSQ TSO on initial AR-210, AR-213, and ALZ-270 events flown using NVDs. Any TSOI may instruct these events during the day or unaided.

d. All instructors must be proficient in the event to instruct.

e. To fly an event aided without an instructor, the TSO must be NSQ and proficient in the given event.

2. Familiarization

a. Purpose. This stage of training will familiarize the TSO with local squadron procedures and introduce the TSO to the use and wear of NVDs.

b. General. Emphasis shall be on planning, briefing, pre-flight

procedures, and CRM.

c. Ground Training. None.

d. Flight Training (3 Flights, 10.0 Hours)

FAM-201 4.0 1 KC-130 A (N)

Goal. Introduce the TSO to local area and squadron operating procedures.

Requirement. Execute a local flight, concentrating on local course rules procedures IAW station orders, squadron and TSO SOPs.

Performance Standard. Per local and squadron directives, NATOPS, FLIP, and ICAO procedures.

Prerequisite. 190. The TSO will review the squadron and TSO SOP's prior to this flight and shall successfully complete a local course rules examination.

Ordnance. None.

External Syllabus Support. None.

NSFAM-204 3.0 1 KC-130 A NS

Goal. Introduce the TSO to the use and wear of NVDs under high light level (HLL) conditions with emphasis on NVD pre-flight, in-flight donning, and CRM.

Requirement. The TSO will plan and fly a non-tactical NVD sortie under HLL conditions. The TSO shall be introduced to: NVD emergency procedures, proper NVD scanning techniques, terrain recognition, atmospheric impact on NVD performance, and visual acuities associated with HLL conditions. A pilot NSI, a flight engineer NSI, or a TSO NSI may instruct this sortie.

Performance Standard. Demonstrate the ability to function as a TSO IAW NATOPS utilizing NVDs under HLL.

Prerequisite. 201. Must complete Night Lab and receive NVD I and NVD II MAWTS-1 ASPs.

Ordnance. None.

External Syllabus Support. None.

NSFAM-205 3.0 1 KC-130 A NS

Goal. Introduce the TSO to the use and wear of NVDs under low light level (LLL) conditions with emphasis on NVD pre-flight, in-flight donning, and CRM.

Requirement. The TSO will plan and fly a non-tactical NVD sortie under LLL conditions. The TSO shall refine proper NVD scanning techniques, be introduced to terrain recognition, atmospheric impact on NVD performance, and visual acuities associated with LLL conditions. A pilot NSI, a flight

engineer NSI, or a TSO NSI may instruct this sortie. Performance Standard. Demonstrate the ability to function as a TSO IAW NATOPS utilizing NVDs under LLL conditions.

Prerequisite. 204.

Ordnance. None.

External Syllabus Support. None.

3. Aerial Refueling

a. Purpose. To develop the TSO's knowledge, understanding, and proficiency to that point required for the various types of air-to-air refueling missions.

b. General

(1) Aircraft should have an operating APX, UHF/DF, A/A TACAN, and weather RADAR.

(2) For AR-210 and AR-213, a TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI who is NSQ may instruct a NSQ TSO on initial AR-210 and AR-213 events flown using NVDs. Any TSOI may instruct these events during the day or unaided.

c. Ground Training. The TSO will review air-to-air refueling procedures in the NATOPS and the Air-to-Air Refueling (AAR) Manual.

d. Flight Training (3 Flights, 6.0 Hours)

AR-210 2.0 1 KC-130 A (N)

Goal. Refine skills required to plan, brief, and execute a fixed wing/tilt rotor air-to-air refueling mission.

Requirement. Perform TSO duties on a fixed wing/tilt rotor air-to-air-refueling mission IAW NATOPS. A TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI who is NSQ may instruct a NSQ TSO on the initial event flown using NVDs. Any TSOI may instruct these events during the day or unaided.

Performance Standard. Arrive at an ARCP at ARCT (+/- 1 min) and maintain aircraft position within assigned refueling airspace.

Prerequisite. 201.

Ordnance. None.

External Syllabus Support. Fixed wing/tilt rotor receivers required.

AR-212 2.0 1 KC-130 A

Goal. Refine skills required to plan, brief, and execute a day rotary wing air-to-air refueling mission.

Requirement. Perform TSO duties on a day rotary wing air-to-air refueling mission.

Performance Standard. Locate the receiver using RADAR, APX, UHF/DF, and/or A/A TACAN. Conduct a minimum of two (2) head-on offset and one (1) running, enroute rendezvous.

Prerequisite. 201.

Ordnance. None.

External Syllabus Support. Rotary wing receivers required.

AR-213 2.0 1 KC-130 A N (NS)

Goal. Introduce skills required to plan, brief, and execute a night rotary wing air-to-air refueling mission.

Requirement. Perform TSO duties on a night rotary wing air-to-air refueling mission. A TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI that is NSQ may instruct a NSQ TSO on the initial event flown using NVDs.

Performance Standard. Locate the receiver using RADAR, APX, UHF/DF, and/or A/A TACAN. Conduct a minimum of two (2) head-on offset and one (1) running, enroute rendezvous.

Prerequisite. 212.

Ordnance. None.

External Syllabus Support. Rotary wing receivers required.

4. Tactical Navigation

a. Purpose. To develop the TSOs knowledge and proficiency in tactical navigation.

b. General. Emphasis shall be placed on: computer-based mission planning systems, RADAR terrain mapping, terrain masking, urinal usage, threat avoidance, time, and course control.

c. Ground Training. The TSO will review the appropriate KC-130 TACMAN chapters on low level and low altitude tactics operations.

d. Flight and Simulator Training (2 Flights, 4.0 Hours/2 Sims, 4.0 Hours

TACNAV-220 2.0 WST S

Goal. Refine skills required to plan, brief, and execute a tactical, low level sortie.

Requirement

(1) Perform TSO duties on a tactical, low-level sortie.

(2) Review route planning and chart preparation procedures emphasizing checkpoint selection, use of intermediate

checkpoints, limiting features, prominent terrain features, and airspace control measures.

(3) Conduct a route brief.

(4) Navigate along a low level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.

(5) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. 201.

Ordnance. None.

External Syllabus Support. None.

TACNAV-221 2.0 1 KC-130 A

Goal. Refine skills required to plan, brief, and execute a tactical, low-level sortie.

Requirement

(1) Perform TSO duties on a tactical, low-level sortie.

(2) Review route planning and chart preparation procedures emphasizing checkpoint selection, use of intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures.

(3) Conduct a route brief.

(4) Navigate along a low level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.

(5) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. 201 and 220.

Ordnance. None.

External Syllabus Support. None.

TACNAV-222 2.0 WST S NS

Goal. Introduce skills required to plan, brief, and execute a HLL night systems, tactical, low-level sortie.

Requirement

(1) Perform TSO duties under HLL conditions on a tactical, low-level sortie.

(2) Introduce the tactical advantages and administrative restrictions associated with HLL conditions.

(3) Review route planning and chart preparation procedures emphasizing checkpoint selection, use of intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures during HLL conditions.

(4) Conduct a route brief.

(5) Navigate along a low level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.

(6) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. 204.

Ordnance. None.

External Syllabus Support. None.

TACNAV-223 2.0 R 1 KC-130 A NS

Goal. Introduce skills required to plan, brief, and execute a HLL night systems, tactical, low-level sortie.

Requirement.

(1) Perform TSO duties under HLL conditions on a tactical, low-level sortie.

(2) Introduce the tactical advantages and administrative restrictions associated with HLL conditions.

(3) Review route planning and chart preparation procedures emphasizing checkpoint selection, intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures during HLL conditions.

(4) Conduct a route brief.

(5) Navigate along a low level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.

(6) Discuss CRM considerations during tactical operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30

seconds of a pre-determined TOT.
Prerequisite. 204 and 222.

Ordnance. None.

External Syllabus Support. None.

5. Aerial Delivery

a. Purpose. To instruct the TSO in aerial delivery techniques. At the end of this stage the TSO will be able to compute an air delivery release point, understand all checklists and time warnings, and call the airdrop.

b. General. Initial instruction should be conducted by a WTI or ANI.

c. Ground Training. The TSO shall review the TACMAN chapter pertaining to aerial delivery and receive instruction on computed air release point (CARP) computations per Air Force Instruction (AFI) 11-231.

d. Flight and Simulator Training (2 Flights, 3.0 Hours/1 Sim, 1.5 Hours)

AD-240 1.5 WST S

Goal. Introduce air delivery techniques and navigation procedures to release points in connection with static-line personnel and cargo aerial delivery.

Requirement.

(1) Perform TSO duties on an aerial delivery sortie.

(2) Review route planning and chart preparation procedures emphasizing release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists and emergency procedures, slow-down procedures, and ingress/egress options.

(3) Plan a route to a drop zone and compute a static-line, CDS, and a HE CARP.

(4) Conduct an objective area brief to include planned release point, drop zone hazards, IP inbound, slow-down, and egress.

(5) Navigate to a drop zone, relay all time warnings, call a static-line personnel, a CDS and an HE aerial delivery, and navigate an egress route.

(6) Discuss CRM considerations during aerial delivery operations.

Performance Standard. Must compute and execute a static-line personnel, a CDS, and an HE aerial delivery that lands within drop zone safety criteria.

Prerequisite. 201.

Ordnance. None.

External Syllabus Support. None.

AD-241 1.5 R 1 KC-130 A

Goal. Refine air delivery techniques and navigation procedures to release points in connection with cargo aerial delivery.

Requirement.

(1) Perform TSO duties on a cargo aerial delivery sortie.

(2) Review route planning and chart preparation procedures emphasizing release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists, emergency procedures, slow-down procedures, and ingress/egress options.

(3) Plan a route to a drop zone and compute a CDS and an HE CARP.

(4) Conduct an objective area brief to include planned release point, drop zone hazards, IP inbound, slow-down, and egress.

(5) Navigate to a drop zone, relay all time warnings, call a CDS or HE aerial delivery, and navigate an egress route.

(6) Discuss CRM considerations during aerial delivery operations.

Performance Standard. Must compute and execute a CDS or HE aerial delivery that lands within drop zone safety criteria.

Prerequisite. 240.

Ordnance. None.

External Syllabus Support. Aerial Delivery Platoon or equivalent, material handling equipment and support personnel, a DZ team to include a corpsman, and a drop zone survey IAW MCO 3500.20_. A PPN-19/SMP-2000 is recommended but not required.

AD-242 1.5 R 1 KC-130 A

Goal. Introduce air delivery techniques and navigation procedures to release points in connection with low-altitude static-line personnel aerial delivery.

Requirement.

(1) Perform TSO duties on a static-line personnel aerial delivery sortie.

(2) Review route planning and chart preparation procedures. Emphasize release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists, emergency procedures, slow-down procedures, and ingress/egress options.

(3) Plan a route to a drop zone and compute a CARP.

(4) Conduct an objective area brief to include planned release point, drop zone hazards, IP inbound, slow-down, and egress.

(5) Navigate to a drop zone, relay all time warnings, call a static-line personnel aerial delivery, and navigate an egress route.

(6) Discuss CRM considerations during aerial delivery operations.

Performance Standard. Jumpers must land within drop zone safety criteria.

Prerequisite. 240.

Ordnance. None.

External Syllabus Support. Aerial delivery qualified personnel, a DZ team to include a corpsman, and a drop zone survey IAW MCO 3500.20_. A PPN-19/SMP-2000 is recommended but not required.

6. Long Range Navigation Familiarization

a. Purpose. Refine the TSO's proficiency and confidence required for safe extended ICAO/Non-RADAR flight. Specifically, at the end of this stage the TSO will be able to:

(1) Integrate all available navigation aids.

(2) Use the aircraft's RADAR for fixing and/or weather avoidance as necessary.

(3) Correctly determine the required planned ramp, ensuring fuel consumption and corresponding progress toward destination are within safe limits.

b. General. This flight shall be accomplished in an ICAO environment on a multi-national itinerary with a minimum of one 5-hour route.

c. Ground Training. The TSO will review procedures for ICAO flight to include the FLIP and FCG.

d. Flight Training (1 Flight, 5.0 Hours)

LRNAV-250 5.0 R 1 KC-130 A (N) (NS)

Goal. Integrate all available navigation aids emphasizing INS and GPS operations in a global environment.

Requirement. The TSO will demonstrate the ability to perform mission planning in an ICAO environment and to determine the aircraft's position within FLIP tolerances.

Performance Standard. Per NATOPS, FLIP, ICAO, and FCG procedures.

Prerequisite. 201.

Ordnance. None.
External Syllabus Support. None.

7. IR Threat Reaction

a. Purpose. To train the TSO in the skills required to operate the KC-130 Aircraft Survivability Equipment (ASE) suite in a tactical scenario in an IR MANPAD/small arms surface to air threat environment.

b. General

(1) Aircraft should have a fully operational ASE suite.

(2) Appropriate decoy flares shall be loaded prior to each flight.

c. Ground Training. The TSO shall receive instruction on the IR/MANPAD threat, IR counter-tactics, decoy flare characteristics and effectiveness, capabilities and limitations of the AAR-47, ALE-39/47, and ALQ-157.

d. Flight and Simulator Training (1 Flight, 2.0 Hours/1 Sim, 2.0 Hours)

THRX-260 2.0 WST S

Goal. Introduce the planning considerations and in-flight operation of the ASE systems with emphasis on setup of the system for automatic and continuous defense against an IR/MANPAD, SPEERS, and small arms surface to air threat.

Requirement.

(1) Perform TSO duties associated with the operation of the ASE suite in order to counter an IR/MANPAD and small arms surface to air threat.

(2) Plan and configure the ASE suite to counter an IR/MANPAD and small arms surface to air threat.

(3) Introduce the basic concepts of various flare load-out configurations and decoy flare capabilities and limitations. Introduce programming and operation of the ALE-39/47 CMDS.

(4) Discuss the ALQ-157 IR jammer codes and power up/power down procedures.

(5) Discuss the AAR-47s capabilities and limitations.

(6) Discuss IR/MANPAD and small arms counter-tactics to include appropriate expendables and maneuvers for a specific threat.

(7) Discuss CRM considerations for operations in a threat environment.

(8) Deploy expendables using both the remote dispensing switches and master switch.

(9) Eight (8) passes shall be made against a simulated IR/MANPAD threat system and appropriate maneuvers and countermeasures initiated.

Performance Standard. Must correctly configure and operate the ASE suite, use appropriate terminology, and initiate appropriate defensive responses to threat indications.

Prerequisite. 201 and 220.

Ordnance. None.

External Syllabus Support. None.

THRX-261 2.0 R 1 KC-130 A (N) (NS)

Goal. Refine the planning considerations and in-flight operation of the ASE systems with emphasis on setup of the system for automatic and continuous defense against an IR/MANPAD and small arms surface to air threat.

Requirement

(1) Perform TSO duties associated with the operation of the ASE suite in order to counter an IR/MANPAD and small arms surface to air threat.

(2) Plan and configure the ASE suite to counter an IR/MANPAD and small arms surface to air threat.

(3) Demonstrate a basic understanding of various flare load-out configurations and decoy flare capabilities and limitations. Demonstrate the ability to program and operate the ALE-39/47 CMDS.

(4) Demonstrate an understanding of the ALQ-157 IR jammer codes and power up/power down procedures.

(5) Demonstrate an understanding of the AAR-47s capabilities and limitations.

(6) Discuss IR/MANPAD and small arms counter-tactics to include appropriate expendables and maneuvers for a specific threat.

(7) Discuss CRM considerations for operations in a threat environment.

(8) Deploy expendables using both the remote dispensing switches and master switch.

(9) Four (4) engagements shall be made against a simulated IR/MANPAD threat system and appropriate maneuvers and countermeasures initiated.

Performance Standard. Must correctly configure and operate the ASE suite, use appropriate terminology and initiate appropriate defensive responses to threat indications.

Prerequisite. 201 and 221.

Ordnance. 300 decoy flares.

External Syllabus Support. SUAS permitting deployment of decoy flares. An EW range with smokey SAM teams, AAR-47 stimulators and debrief capabilities greatly enhance aircrew training and should be used to the maximum extent possible.

8. Expeditionary Airfield/Assault Landing Zone Operations (EAF)/(ALZ)

a. Purpose. To develop the necessary skills to plan and navigate to VFR airfields (including unimproved ALZs) and conduct a self contained approach.

b. General. Flights shall be accomplished in day or night VMC.

c. Ground Training. The TSO shall review the TACMAN chapter regarding ALZ operations, and receive instruction on self contained approach construction.

d. Flight and Simulator Training (1 Flight, 1.5 Hours, 1 Sim, 1.5 Hours)

ALZ-270 1.5 WST S

Goal. Introduce the planning considerations and the construction of a self contained approach plate.

Requirement.

(1) Introduce SCA planning criteria, emphasizing ALZ requirements, terrain avoidance considerations, construction of the SCA plate, obstacle clearance criteria, slow down calculation, missed approach planning, the threat, and day/night/NS considerations.

(2) Construct a SCA approach plate.

(3) Conduct a SCA to an ALZ integrating all available navigation aids. The TSO will provide advisories to the pilots throughout the approach phase from initial descent to touchdown.

(4) The TSO will not have access to visual navigation aids during training.

Prerequisite. 201 and 220.

Performance Standard. Successfully execute at least four (4) self-contained approaches to two (2) different runways, using two (2) different ingress altitudes, with at least one missed approach.

External Syllabus Support. None.

ALZ-271 1.5 R 1 KC-130 A (N) (NS)

Goal. Refine the planning considerations and execution of a self-contained approach.

Requirement.

(1) Demonstrate an understanding of SCA planning criteria, emphasizing ALZ requirements, terrain avoidance

considerations, construction of the SCA plate, obstacle clearance criteria, slow down calculation, missed approach planning, the threat, and day/night/NS considerations.

(2) Construct a SCA approach plate.

(3) Conduct a SCA to an ALZ integrating all available navigation aids. The TSO will provide advisories to the pilots throughout the approach phase from initial descent to touchdown.

(4) The TSO will not have access to visual navigation aids during training.

Prerequisite. 201 and 221.

Performance Standard. For initial training, successfully execute at least four (4) self-contained approaches to two (2) different runways, using two (2) different ingress altitudes, with at least one missed approach.

External Syllabus Support. MMT, STS, EAF and/or CFR as required.

333. CORE SKILL ADVANCED TRAINING

1. General

a. This phase of instruction trains the TSO in advanced core skills to include: TACNAV, AD, THRX(R), and ALZ.

b. The TSO under instruction shall receive the appropriate MAWTS-1 course catalog academic support package (ASP) lectures prior to the appropriate stage of training.

c. A TSO NSI is required to instruct initial AD-341.

d. All instructors must be proficient in the event to instruct.

e. To fly an event aided without an instructor, the TSO must be NSQ and proficient in the given event.

2. Tactical Navigation

a. Purpose. Refine TSOs knowledge and proficiency in advanced tactical navigation, introduce LAT, and familiarize the TSO with the phenomena peculiar to flight at or near the comfort level.

b. General. Emphasis shall be placed on: computer-based mission planning systems, RADAR terrain mapping, terrain masking, threat assessment and avoidance, time, and course control.

c. Ground Training. The TSO will review the KC-130 TACMAN for low level and LAT operations.

d. Flight and Simulator Training (3 Flights, 4.0 Hours)

TACNAV-321	1.0	1 KC-130	A

Goal. Introduce skills required to plan, brief, and execute a tactical, low level sortie in a LAT environment.

Requirement

(1) Perform TSO duties on a tactical, low-level sortie in the LAT environment.

(2) Review route planning and chart preparation procedures emphasizing threat assessment and avoidance, terrain masking, checkpoint selection, and airspace control measures.

(3) Conduct a route brief.

(4) Navigate along an approved LAT route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids and maximizing use of terrain to degrade detection and enhance survivability.

(5) Discuss CRM considerations during operations at or near crew comfort level.

Performance Standard. Maintain awareness of aircraft position within route width/airspace during LAT maneuvering.

Prerequisite. 221.

Ordnance. None.

External Syllabus Support. None.

TACNAV-322 1.0 R 1 KC-130 A

Goal. Demonstrate skills required to plan, brief, and execute a tactical, low level sortie in a LAT environment.

Requirement

(1) Perform TSO duties on a tactical, low-level sortie in the LAT environment.

(2) Demonstrate an understanding of route planning and chart preparation procedures emphasizing threat assessment and avoidance, terrain masking, checkpoint selection, and airspace control measures.

(3) Conduct a route brief.

(4) Navigate along an approved LAT route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids and maximizing use of terrain to degrade detection and enhance survivability.

(5) Discuss CRM considerations during operations at or near crew comfort level.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT during LAT maneuvering.

Prerequisite. 321.

Ordnance. None.

External Syllabus Support. None.

TACNAV-324 2.0 R 1 KC-130 A NS

Goal. Introduce skills required to plan, brief, and execute a tactical, low-level sortie under LLL conditions.

Requirement

(1) Perform TSO duties on a tactical, low-level sortie under LLL conditions.

(2) Introduce the tactical advantages and administrative restrictions associated with LLL conditions.

(3) Review night route planning and chart preparation procedures emphasizing checkpoint selection, altitude planning, use of intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures during night operations.

(4) Conduct a route brief.

(5) Navigate along a low level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.

(6) Discuss CRM considerations associated with tactical NS operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. 223.

Ordnance. None.

External Syllabus Support. None.

3. Aerial Delivery

a. Purpose. To demonstrate a thorough understanding of advanced aerial delivery techniques.

b. General. Instruction should be conducted by a TSO NSI.

c. Ground Training. The TSO will review the KC-130 TACMAN for aerial delivery operations.

d. Flight Training (1 Flights, 1.5 Hours)

AD-341 1.5 R 1 KC-130 A NS

Goal. Refine air delivery techniques and navigation procedures to release points in connection with static-line

personnel or cargo aerial delivery utilizing NVDs.

Requirement

(1) Perform TSO duties on a static-line personnel or cargo aerial delivery sortie on NVDs.

(2) Review route planning and chart preparation procedures emphasizing NS considerations to release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists and emergency procedures, slow-down procedures, and ingress/egress options.

(3) Plan a route to a drop zone and compute a CARP.

(4) Conduct an objective area brief to include planned release point, drop zone hazards and markings, IP inbound, slow-down, and egress.

(5) Navigate to a drop zone, relay all time warnings, call an aerial delivery, and navigate an egress route utilizing NVDs.

(6) Discuss CRM considerations during NS aerial delivery operations.

Performance Standard. Must compute and execute an aerial delivery that lands within drop zone safety criteria.

Prerequisite. 241, 242 and 600.

Ordnance. None.

External Syllabus Support. Aerial Delivery Platoon or equivalent, material handling equipment and support personnel as required, a DZ team to include a corpsman, and a drop zone survey IAW MCO 3500.20. A PPN-19/SMP-2000 is recommended but not required.

4. RADAR Threat Reaction

a. Purpose. To train the TSO in the skills required to operate the KC-130 ASE suite in a tactical scenario in a RADAR threat environment.

b. General

(1) Aircraft should have a fully operational ASE suite.

(2) Appropriate chaff and decoy flares shall be loaded prior to each flight.

c. Ground Training. The TSO shall receive instruction on the RADAR threat, RADAR counter-tactics, chaff characteristics and effectiveness, capabilities and limitations of the ALE-39/47 and APR-39.

d. Flight and Simulator Training (1 Flight, 2.0 Hours/1 Sim, 2.0 Hours)

THRX-360 2.0 WST S

Goal. Introduce the planning considerations and in-flight operation of the ASE systems with emphasis on configuration of

the system for operations in a RADAR threat environment.

Requirement

(1) Perform TSO duties associated with the operation of the ASE suite in order to counter a RADAR threat.

(2) Plan and configure the ASE suite to counter a RADAR threat.

(3) Introduce the basic concepts of various chaff and flare load-out configurations, capabilities and limitations of decoy chaff and flare. Refine programming and operation of the ALE-39/47 CMDS.

(4) Introduce APR-39 operation emphasizing Operational Flight Program (OFP), Emitter Identification Database (EID), and threat symbology.

(5) Discuss the AAR-47s capabilities and limitations as it applies to the RADAR threat.

(6) Discuss RADAR threat counter-tactics to include appropriate expendables and maneuvers for a specific threat.

(7) Discuss CRM considerations for operations in a threat environment.

(8) Deploy expendables in response to a RADAR threat indication.

(9) Conduct multiple passes against simulated RADAR threat systems and initiate appropriate maneuvers and countermeasures.

Performance Standard. Must correctly configure and operate the ASE suite, use appropriate terminology, and initiate correct defensive responses to threat indications.

Prerequisite. 260.

Ordnance. None.

External Syllabus Support. None.

THRX-361 2.0 1 KC-130 A (N) (NS)

Goal. Refine the planning considerations and in-flight operation of the ASE systems with emphasis on configuration of the system for operations in a RADAR threat environment.

Requirement

(1) Perform TSO duties associated with the operation of the ASE suite in order to counter a RADAR threat.

(2) Plan and configure the ASE suite to counter a RADAR threat.

(3) Refine the understanding of the basic concepts of various

chaff and flare load-out configurations, capabilities and limitations of decoy chaff and flare. Refine programming and operation of the ALE-39/47 CMDS.

(4) Introduce APR-39 operation emphasizing Operational Flight Program (OFP), Emitter Identification Database (EID), and threat symbology.

(5) Discuss the AAR-47s capabilities and limitations as it applies to the RADAR threat.

(5) Discuss RADAR threat counter-tactics to include appropriate expendables and maneuvers for a specific threat.

(6) Discuss CRM considerations for operations in a threat environment.

(7) Deploy expendables in response to a RADAR threat indication.

(8) Conduct multiple passes against simulated RADAR threat systems and initiate appropriate maneuvers and countermeasures.

Performance Standard. Must correctly configure and operate the ASE suite, use appropriate terminology, and initiate correct defensive responses to threat indications.

Prerequisite. 261.

Ordnance. 240 chaff.

External Syllabus Support. An operable EW range allowing chaff dispensing. An EW range with debrief facilities greatly enhance aircrew training and should be used to the maximum extent possible.

5. Expeditionary Airfield/Temporary Landing Zone (EAF)/(ALZ)

a. Purpose. To refine the skills necessary to plan and navigate to airfields emphasizing ingress/egress and approach profiles.

b. General. ALZ-370 shall be accomplished in day or night VMC conditions.

c. Ground Training. The TSO shall review the KC-130 TACMAN chapters concerning ALZ operations.

d. Flight Training (1 Flight, 1.5 Hours)

ALZ-370 1.5 1 KC-130 A (N) (NS)

Goal. To refine the skills necessary to plan and navigate to airfields emphasizing ingress/egress and approach profiles in a threat environment.

Requirement

(1) Demonstrate an understanding of the various ingress and approach options to an airfield in a threat environment

including SCA, random high, random low/shallow, straight-in, teardrop, and abeam approaches.

(2) Demonstrate an understanding of SCA planning considerations associated with the various threat environments.

(3) Discuss the advantages and disadvantages of various egress profiles.

(4) Plan and execute multiple ingresses to an airfield to include: random high, random low/shallow, straight-in, teardrop, and abeam approaches; compute slowdown and descent points for the various approaches.

Prerequisite. 270.

Performance Standard. For initial training, execute a random high, random low/shallow, straight-in, teardrop, and an abeam approach.

External Syllabus Support. MMT, STS, EAF and/or CFR as required.

334. CORE PLUS TRAINING

1. General

a. This phase of instruction trains the TSO in core plus skills to include: AAR, TACNAV, AD, and DEFTAC.

b. The TSO under instruction shall receive the MAWTS-1 course catalog academic support package (ASP) lecture prior to the appropriate stage of training.

c. All instructors must be proficient in the event to instruct.

d. To fly an event aided without an instructor, the TSO must be NSQ and proficient in the given event.

2. Air-to-Air Refueling

a. Purpose

(1) To develop the necessary skills to perform the tasks required of the lead TSO and rendezvous controller on a long range air-to-air refueling mission.

(2) To designate the TSO as a "Rendezvous Controller" after successful completion of AR-411.

b. General

(1) Flights shall be conducted in conjunction with a movement of receiver aircraft in either a ferry, deep air strike profile (fixed wing), or long range insert profile (rotary wing/tilt rotor) requiring a refueling area commander.

(2) The TSO shall have demonstrated an ability to plan and execute long range air-to-air refueling missions including ALTRV or other airspace coordination measures.

c. Ground Training. The TSO should have completed the Central Altitude Reservation Indoctrination Course and shall receive instruction on Rendezvous Control Procedures prior to this stage.

d. Flight Training (2 Flights, 6.0 Hours)

AR-410 3.0 1 KC-130 A (N) (NS)

Goal. To refine the skills required to assist in planning and leading a long-range, air-to-air refueling mission.

Requirement

(1) Assist the rendezvous controller in planning and coordinating a long-range, air-to-air refueling mission.

(2) Introduce the planning and coordination associated with an ALTRV.

(3) Demonstrate the ability to use an ALTRV.

(4) Use appropriate navigation aids to arrive at an ARCP and maintain course on a refueling track.

Performance Standard. Direct aircraft to arrive at the ARCP and assist the rendezvous controller in conducting a successful rendezvous with receiver aircraft.

Prerequisite. If fixed wing/tilt rotor – 210, if rotary wing day - 212, rotary wing night - 213, if NS – 600.

Ordnance. None.

External Syllabus Support. Fixed wing or rotary wing receivers required.

AR-411 3.0 R E 1 KC-130 A (N) (NS)

Goal. To demonstrate the skills required to plan and execute a long-range, air-to-air refueling mission and prepare the TSO for rendezvous controller designation.

Requirement

(1) Plan and conduct a long-range, air-to-air refueling mission to include receiver fuel requirements, tanker requirements, abort criteria, track location and administrative requirements.

(2) Demonstrate a thorough understanding of ALTRV procedures to include message requirements, coordination, and filing procedures.

(3) Conduct the planning and coordination of an ALTRV or other airspace required to facilitate the long range movement of receiver aircraft.
Performance Standard. Conduct a successful long range, air-to-air refueling mission.

Prerequisite. 410. If fixed wing/tilt rotor – 210, if rotary

wing day - 212, rotary wing night - 213, if NS – 600.

Ordnance. None

External Syllabus Support. Fixed wing or rotary wing receivers required.

3. Tactical Navigation

a. Purpose. Refine TSOs knowledge and proficiency in advanced tactical navigation and familiarize the TSO with the phenomena peculiar to flight at night without NVDs.

b. General. Emphasis shall be placed on: night considerations in the low-level environment, computer-based mission planning systems, RADAR terrain mapping, terrain masking, threat assessment and avoidance, and time and course control.

c. Ground Training. The TSO will review the appropriate KC-130 TACMAN chapters for low level and LAT operations.

d. Flight and Simulator Training (1 Flight, 2.0 Hours)

TACNAV-422 2.0 1 KC-130 A N

Goal. Introduce skills required to plan, brief, and execute a night unaided, tactical, low-level sortie.

Requirement

(1) Perform TSO duties on an unaided, night, tactical, low-level sortie.

(2) Introduce the tactical advantages and administrative restrictions associated with night operation.

(3) Review night route planning and chart preparation procedures emphasizing checkpoint selection, altitude planning, use of intermediate checkpoints, limiting features, prominent terrain features, and airspace control measures during night operations.

(4) Conduct a route brief.

(5) Navigate along a low level route consisting of a minimum of six (6) pre-selected checkpoints integrating all available navigation aids.

(6) Discuss CRM considerations associated with tactical night operations.

Performance Standard. Maintain aircraft position within route width and arrive at a pre-selected checkpoint within +/- 30 seconds of a pre-determined TOT.

Prerequisite. 324.
Ordnance. None.

External Syllabus Support. None.

4. Aerial Delivery

a. Purpose. To demonstrate a thorough understanding of advanced aerial delivery techniques in the night environment.

b. General. Instruction should be conducted by a WTI or ANI. For AD-442, a TSO NSI is required only if the initial sortie is conducted using NVDs and the TSO under instruction is not NSQ. A TSOI who is NSQ may instruct a NSQ TSO on initial AD-442 event flown using NVDs. Any TSOI may instruct this event during the day or unaided.

c. Ground Training. The TSO will review the appropriate KC-130 TACMAN chapters for aerial delivery and battlefield illumination.

d. Flight Training (3 Flights, 3.0 Hours)

AD-440 1.0 1 KC-130 A N

Goal. Introduce air delivery techniques and navigation procedures to release points in connection with static-line personnel or cargo aerial delivery at night without NVDs.

Requirement

(1) Perform TSO duties on a static-line personnel or cargo aerial delivery sortie at night without NVDs.

(2) Review route planning and chart preparation procedures emphasizing night considerations to release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists and emergency procedures, slow-down procedures, and ingress/egress options.

(3) Plan a route to a drop zone and compute a CARP.

(4) Conduct an objective area brief to include: a planned release point, drop zone hazards, markings, IP inbound, slow-down, and egress.

(5) Navigate to a drop zone, relay all time warnings, call an aerial delivery, and navigate an egress route at night without NVDs.

(6) Discuss CRM considerations associated with night, unaided aerial delivery operations.

Performance Standard. Must compute and execute an aerial delivery that lands within drop zone safety criteria.

Prerequisite. 341.

Ordnance. None.

External Syllabus Support. Aerial Delivery Platoon or equivalent, material handling equipment and support personnel as required, a DZ team to include a corpsman, and a drop zone survey IAW MCO 3500.20_. A PPN-19/SMP-2000 is recommended but not required.

AD-442 1.0 1 KC-130 A (N)

Goal. Conduct aerial delivery of personnel/cargo utilizing high altitude release techniques with emphasis on HARP computations and navigation to release points.

Requirement

(1) Perform TSO duties on a high altitude aerial delivery sortie.

(2) Review route planning and chart preparation procedures emphasizing high altitude release point computation, aerial delivery limitations, drop zone criteria, aerial delivery checklists, emergency procedures, slow-down procedures, and ingress/egress options.

(3) Plan a route to a drop zone and compute a high altitude aerial delivery of personnel or cargo.

(4) Conduct an objective area brief to include planned release point, drop zone hazards, IP inbound, slow-down, and egress.

(5) Navigate to a release point, relay all time warnings, call a high altitude aerial delivery of personnel or cargo, and navigate an egress route.

(6) Discuss CRM considerations during aerial delivery operations.

(7) Discuss physiology considerations appropriate to high altitude aerial delivery operations.

Performance Standard. Must compute and execute a high altitude aerial delivery that lands within drop zone safety criteria.

Prerequisite. 240.

Ordnance. None.

External Syllabus Support. High altitude certified personnel or cargo, a DZ team to include a corpsman, an aviation physiologist (if required), and a drop zone survey IAW MCO 3500.20_. A PPN-19/SMP-2000 is recommended but not required.

AD-444 1.0 1 KC-130 A N

Goal. Instruct the TSO in the skills necessary to perform Battlefield Illumination.

Requirement

(1) Perform TSO duties on a battlefield illumination sortie.

(2) Review route planning and chart preparation procedures emphasizing release point computation, APF delivery characteristics, orbit and delivery patterns, battlefield illumination checklists, emergency procedures, slow-down procedures, and ingress/egress options.

(3) Direct the aircraft to a target area and compute an APF CARP.

(4) Conduct an objective area brief to include planned release point, illumination patterns, slow-down, and egress.

(5) Navigate to a release point, relay all time warnings, call a release of APFs, and navigate an egress route.

(6) Discuss CRM considerations during battlefield illumination operations.

Performance Standard. For initial sortie conduct at least one area illumination pattern and one point target illumination pattern utilizing a standoff orbit, providing the desired illumination effect on the target.

Prerequisite. 201.

Ordnance. 20 LUU-2/19 Aircraft Parachute Flares (APF).

External Syllabus Support. SUAS permitting deployment of APFs.

5. Defensive Tactics (DEFTAC)

a. Purpose. To introduce the TSO to DEFTAC.

b. General

(1) Emphasis shall be on DEFTAC maneuvering and CRM considerations during DEFTAC.

(2) A Pilot DEFTACI or TSOI may instruct this event.

(3) The aircraft should have an operable ASE suite.

c. Ground Training. Prior to this flight phase the TSO shall review the appropriate KC-130 TACMAN chapters on DEFTAC.

d. Flight Training (1 Flight, 1.5 Hours)

DEFTAC-462 1.0 1 KC-130 A

Goal. Familiarize the TSO with the skills and crew coordination required while executing DEFTAC against aggressor aircraft.

Requirement

(1) Demonstrate an understanding of KC-130 defensive maneuvers.

(2) Demonstrate an understanding of air-to-air threat.

(3) During DEFTAC, demonstrate the proper maneuver calls and crew coordination.

(4) Discuss the use of the ASE suite to counter an air-to-air threat.

Performance Standard. Demonstrate proper crew coordination during DEFTAC.

Prerequisite. 322.

Ordnance. None.

External Syllabus Support. Rear Vision Device (RVD) and aggressor aircraft required.

335. INSTRUCTOR TRAINING

1. General. The TSO IUT shall receive the MAWTS-1 ASP Courseware on Student Briefing and Critique, and Student/Instructor Roles prior to beginning this stage of training.

2. TSO Instructor (TSOI)

a. Purpose. To standardize TSO instructor procedures for the KC-130 aircraft.

b. General

(1) Emphasis shall be placed on standardization and the ability of the TSO to instruct TSO procedures.

(2) Ability to instruct all phases of flight training shall be evaluated in which the TSO has previously demonstrated proficiency.

(3) A TSO Assistant NATOPS Instructor shall evaluate these flights.

c. Flight Training (4 Flights, 12.0 Hours)

TSOIUT-500 3.0 E 1 KC-130 A (N)

Goal. Evaluate and standardize the TSO's instructional techniques on an LRNAV event.

Requirement. Instruct a TSO on LRNAV-250.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Prerequisite. 250 and the squadron's recommendation for TSOI designation.

Ordnance. None.

External Syllabus Support. None.

TSOIUT-501 3.0 E 1 KC-130 A (N)

Goal. Evaluate and standardize the TSO's instructional techniques on an AR event.

Requirement. Instruct a TSO on an AR event.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Prerequisite. Proficiency in appropriate event and the squadron's recommendation for TSOI designation.

Ordnance. None.

External Syllabus Support. Fixed-wing, rotary-wing, or tilt-rotor receivers required.

TSOIUT-502 3.0 E 1 KC-130 A (N)

Goal. Evaluate and standardize the TSO's instructional techniques on a TACNAV, AD, THRX, or ALZ event.

Requirement. Instruct a TSO on a TACNAV, AD, THRX, or ALZ event.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Prerequisite. Proficiency in appropriate event and the squadron's recommendation for TSOI designation.

Ordnance. As required.

External Syllabus Support. As required.

3. TSO Night Systems Instructor (NSI)

a. Purpose. To qualify the TSO as an NSI.

b. General. A MAWTS-1 instructor shall provide certification for this qualification.

c. Ground Training. The TSO shall review instructions from the MAWTS-1 ASP on Night Vision Device Usage.

d. Flight Training (4 Flights, 6.0 Hours)

NSIUT-510 1.5 E 1 KC-130 A NS

Goal. Evaluate and standardize the NSIUT's instructional techniques on an NS FAM event.

Requirement. Instruct a TSO on an NS FAM event.

Prerequisite. 601, proficiency in the appropriate event, and the squadron's recommendation for NSI designation.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Ordnance. None.

External Syllabus Support. None.

NSIUT-511 1.5 E 1 KC-130 A NS

Goal. Evaluate and standardize the NSIUT's instructional techniques on an NS low-level event.

Requirement. Instruct a TSO on an NS low-level event.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Prerequisite. 510.

Ordnance. None.

External Syllabus Support. None.

NSIUT-512 1.5 E 1 KC-130 A NS

Goal. Evaluate and standardize the NSIUT's instructional techniques on an NS AD event.

Requirement. Instruct a TSO on an NS AD event.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Prerequisite. 510.

Ordnance. None.

External Syllabus Support. As required.

350. REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS (RQD)

1. Instructor Qualifications

RQD-600 1.5 E R 1 KC-130 A NS

Goal. TSO night systems qualification flight. The TSO will demonstrate the required skills to fly a mission while utilizing NVGs.

Requirement

(1) The NSQ training syllabus consists of NSFAM-204, NSFAM-205, and RQD-600. NSFAM-204 and NSFAM-205 may be instructed by a pilot NSI, flight engineer NSI, or TSO NSI. RQD-600 shall be instructed by a TSO NSI on a separate sortie after completion of NSFAM-205.

(2) Perform TSO duties while utilizing NVGs.

(3)High or low light level conditions.

(4) The TSO shall plan, brief, fly, and debrief an NVG sortie with a TSO NSI as the evaluator.

(5) The TSO will demonstrate an understanding of NS operations, an understanding of NS training rules, and the ability to conduct an NVG sortie.

(6) Completion of RQD-600 meets the requirements for the TSO to be night systems qualified. At the discretion of the squadron commanding officer, a letter assigning the TSO as

night systems qualified shall be placed in the NATOPS jacket and APR. The tracking code of RQD-600 shall be logged.

Performance Standard. Successfully plan and conduct a NS sortie.

Prerequisite. 205.

Ordnance. As required.

External Syllabus Support. As required.

RQD-601 3.0 1 KC-130 A (N)

Goal. Certification event for designation as a TSOI.

Requirement. Demonstrate the ability to instruct TSOs on standardized procedures. Completion of RQD-601 meets the requirements for the TSO to be qualified as an instructor. At the discretion of the squadron commanding officer, a letter assigning the TSO as an instructor shall be placed in the NATOPS jacket and APR. The tracking code of RQD-601 shall be logged.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Prerequisite. 500, 501, 502, and proficiency in the appropriate event.

Ordnance. As required.

External Syllabus Support. As required.

RQD-602 1.5 1 KC-130 A NS

Goal. Certification event for designation as a TSO NSI.

Requirement. Demonstrate the ability to instruct TSOs on standardized procedures during an NS event. Completion of RQD-602 meets the requirements for the TSO to be qualified as a night systems instructor. At the discretion of the squadron commanding officer, a letter assigning the TSO as an NSI shall be placed in the NATOPS jacket and APR. The tracking code of RQD-602 shall be logged.

Performance Standard. Effectively instruct the skills necessary to complete the appropriate event.

Prerequisite. 510, 511, and 512.

Ordnance. As required.

External Syllabus Support. As required.

2. Rendezvous Controller

RQD-610 Goal. Tracking code for rendezvous controller.

Requirement. Completion of AR-411 meets the requirements for the TSO to be qualified as a rendezvous controller. At the discretion of the squadron commanding officer, a letter assigning the TSO as a rendezvous controller shall be placed in the NATOPS jacket and APR. The tracking code of RQD-610 shall be logged.

3. TSO Annual Re-qualification

a. Purpose. To conduct annual NATOPS re-qualification.

b. General. A NATOPS/Assistant NATOPS Instructor shall evaluate this flight.

c. Ground Training. TSO must successfully pass the open and closed book examinations per NATOPS prior to the flight.

d. Flight Training (1 Flight, 2.0 Hours)

RQD-690 2.0 E R 1 KC-130 A (N)(NS)

Goal. Annual NATOPS re-qualification check.

Requirement. The TSO will be tested on all previous instruction, knowledge of emergency procedures, and proper operation of all navigation equipment.

Performance Standards. The TSO will perform all duties, emergency procedures, and properly operate all navigation equipment IAW NATOPS, OPNAVINST 3710.7_, all applicable orders and directives, and squadron and TSO SOPs. Completion of RQD-690 meets the requirements for the TSO to be re-qualified as a Tactical Systems Operator. At the discretion of the squadron commanding officer, a letter re-designating the TSO shall be placed in the NATOPS jacket and APR. The tracking code of RQD-690 shall be logged.

Prerequisite. Proficiency in appropriate event for which the TSO is being evaluated.

Ordnance. As required.

External Syllabus Support. As required.

4. Weapons Tactics Instructor (WTI)

a. Purpose. To certify the KC-130 TSO Instructor as a WTI capable of conducting ground and airborne instruction in the KC-130 TSO Combat Qualified and Full Combat Qualified flight syllabus as outlined in MCO P3500.15.

b. General. The KC-130 WTI Course is developed by MAWTS-1 and is conducted in conjunction with the WTI Course. Upon graduation the candidate will be certified by MAWTS-1 as a WTI TSO. WTI designation can be made by the squadron commanding officer.

c. Ground Training. The TSO shall receive all instruction in accordance with the MAWTS-1 Course Of Instruction.

d. Flight Training. All flights are in accordance with MAWTS-1 Course Of Instruction.

RQD-691 Per MAWTS-1 Course of Instruction

Goal. Develop WTIs for the squadron.

Requirement. Use standard WTI instruction techniques as taught at the MAWTS-1 WTI course. Completion of WTI Course meets the requirements for the TSO to be qualified as a Weapons and Tactics Instructor. At the discretion of the squadron commanding officer, a letter assigning the TSO as a WTI shall be placed in the NATOPS jacket and APR. The

tracking code of RQD-691 shall be logged.

Performance Standard. Per MAWTS-1 WTI Course Of Instruction.

Prerequisite. Per MAWTS-1 WTI Planning Guide.

Ordnance. As required.

External Syllabus Support. As required.

5. NATOPS Instructor Check (NTPSI)

a. Purpose. To standardize NTPSI procedures.

b. General

(1) Emphasis shall be placed on standardization of instruction procedures.

(2) An assistant NATOPS evaluator will be evaluated by instructing the senior squadron NATOPS evaluator.

(3) The senior NATOPS evaluator will be evaluated by instructing the group NATOPS evaluator.

c. Flight Training (1 Flight, 3.0 Hours)

RQD-692 3.0 E 1 KC-130 A (N)

Goal. Standardize NTPSI procedures.

Requirement. Evaluate an assistant NATOPS instructor using standardized procedures.

Performance Standard. Per NATOPS and all current flight publications. Completion of RQD-692 meets the requirements for the TSO to be qualified as an NATOPS Instructor. At the discretion of the squadron commanding officer, a letter assigning the TSO as an NI shall be placed in the NATOPS jacket and APR. The tracking code of RQD-692 shall be logged.

Prerequisite. RQD-601.

Ordnance. As required.

External Syllabus Support. As required.

360. EXPENDABLE ORDNANCE REQUIREMENTS

ORDNANCE	100 Series	200 Series	300 Series	400 Series	Refresher	ANNUAL
DECOY FLARES		300	60			360
CHAFF			240			240
LUU-2/19				20		10

361. SYLLABUS MATRIX

AIRCRAFT: KC-130 MOS: 7372/7380 CREW POSITION: TSO

STAGE	TRAINING CODE	HRS	REFLY INTERVAL	CRP	T	C	R	E	REMARKS
CORE SKILL INTRODUCTION TRAINING									
FAM	100	2.0	*	1.5					
	101	2.0	*	1.5					
	102	2.0	*	1.5			X		
	103	2.0	*	1.5			X	X	
AR	110	2.0	*	3.0					
	111	2.0	*	3.0					
	112	2.0	*	3.0					
LL	120	1.0	*	3.0					
	121	1.0	*	3.0					
	122	1.0	*	3.0					
ICAO	150	5.0	*	2.0					(N)
	151	5.0	*	2.0			X		(N)
TSOCK	190	2.0	*	7.0			X	X	(N)
CORE SKILL BASIC TRAINING									
FAM	201	4.0	365	1.0			X		(N)
	204	3.0	365	1.0			X		NS
	205	3.0	365	1.0			X		NS
AR	210	2.0	365	1.5			X		(N)
	212	2.0	365	1.5					
	213	2.0	365	1.5			X		N (NS)
TACNAV	220	2.0	*	0.0					S
	221	2.0	365	1.0					
	222	2.0	*	0.0					S NS
	223	2.0	180	1.0			X		NS
AD	240	1.5	*	0.0					S
	241	1.5	270	1.0			X		
	242	1.5	270	1.0			X		
LRNAV	250	5.0	720	0.5			X		(N)
THRX	260	2.0	*	0.0					S
	261	2.0	365	1.5			X		(N)
ALZ	270	1.5	*	0.0					S
	271	1.5	365	1.5			X		(N)
CORE SKILLS ADVANCED TRAINING									
TACNAV	321	1.0	*	3.0					
	322	1.0	365	3.0			X		
	324	2.0	180	3.0			X		NS
AD	341	1.5	270	3.0			X		NS

AIRCRAFT: KC-130 MOS: 7372/7380 CREW POSITION: TSO

STAGE	TRAINING CODE	HRS	REFLY INTERVAL	CRP	T	C	R	E	REMARKS
THRX	360	2.0	*	0.0					S
	361	2.0	365	4.0			X		(N)(NS)
ALZ	370	1.5	365	4.0			X		(N)(NS)
CORE PLUS TRAINING									
AR	410	3.0	1095	0.7					(N)(NS)
	411	3.0	1095	0.8					(N)(NS)
TACNAV	422	2.0	180	0.7					N
AD	440	1.0	270	0.7					N
	442	1.0	365	0.7					(N)
	444	1.0	730	0.7					N
DEFTAC	462	1.0	730	0.7					
INSTRUCTOR TRAINING									
TSO IUT	500	3.0	*	0.0				X	(N)
	501	3.0	*	0.0				X	(N)
	502	3.0	*	0.0				X	(N)
TSO NSI	510	1.5	*	0.0				X	NS
	511	1.5	*	0.0				X	NS
	512	1.5	*	0.0				X	NS
REQUIREMENTS, QUALIFICATION, AND DESIGNATIONS (RQD)									
RQD	600	1.5	*	0.0			X	X	NS
	601	3.0	*	0.0				X	(N)
	602	3.0	*	0.0					NS
	610	3.0	*	0.0				X	(N)(NS)
	690	2.0	365	0.0			X	X	(N)(NS)
	691	PER MAWTS-1 Course of Instruction							
	692	1.5	365	0.0				X	(N)

362. T&R CHAINING TABLES. Event chaining allows for the completion of more complex and/or advanced events using the same skills to update proficiency status of events. Only events in a sequence entailing demonstration of equivalent skills shall be chained.

a. When a T&R event is logged, the proficiency dates of other T&R events (usually lower in number) may be updated. The T&R code that is logged is known as the “chaining code,” and the updated codes are “chained codes.” Chained codes are not always updated when a chaining code is logged.

b. Conditional Chaining. The following environmental conditions further specify which T&R codes are chain-updated.

(1) Night Optional. Chained codes annotated with parentheses around them, e.g. (200), are only chain-updated if the chaining code is flown at night.

(2) Night Systems Optional. Chained codes annotated with parentheses and "NS" after them, e.g. (200 NS), are only chain-updated if the chaining code is flown using night systems.

(3) Light Level Optional. Chained codes annotated with parentheses and "HLL" after them, e.g. (200 HLL), are only chain-updated if the chaining code is flown using night systems during a high light level period. Chained codes annotated with parentheses and "LLL" after them, e.g. (200 LLL), are only chain-updated if the chaining code is flown using night systems during a low light level period.

c. Syllabus Event Conversion Matrix. The syllabus event conversion matrix is used to convert T&R syllabus event proficiency status of the previous T&R syllabus into event proficiency status of the current T&R for individuals.

MOS 7372/7380 FLIGHT UPDATE CHAINING

FLIGHT	FLIGHTS UPDATED
201	
204	201
205	204, 201
210	201
212	201
213	212, (204 HLL), (205 LLL)
220	
221	201
222	
223	221, 204, 201
240	
241	242, 201
242	241, 201
250	201, (204 HLL), (205 LLL)
260	
261	201, (204 HLL), (205 LLL)
270	
271	201, (204 HLL), (205 LLL)
321	221, 201
322	321, 221, 201
324	223, 221, 205, 201
341	201, (204 HLL), (205 LLL)
360	
361	261, 201, (204 HLL), (205 LLL)
370	271, 201, (204 HLL), (205 LLL)
410	201, (204 HLL), (205 LLL)
411	410, 201, (204 HLL), (205 LLL)
422	324, 223, 221, 201
440	341
442	201, (204 HLL), (205 LLL)
444	201, (204 HLL), (205 LLL)
462	201
500	201
501	201
502	201
510	201, (204 HLL), (205 LLL)

511	201, (204 HLL), (205 LLL)
512	201, (204 HLL), (205 LLL)
600	201, (204 HLL), (205 LLL)
601	201
602	201, (204 HLL), (205 LLL)
610	201, (204 HLL), (205 LLL)
690	201, (204 HLL), (205 LLL)
691	201
692	201

Old Stage	Old Trng Code	New Stage	New Trng Code
200 Level			
CR	200	FAM	201, 250
AR	210	AR	210
AR	211	AR	212
AR	212	AR	213
LL	220	TACNAV	220, 221
LL	221	TACNAV	422
AD	240	AD	240, 242
AD	241	AD	240 , 241
AD	242	AD	240, 241
TLZ	270	ALZ	270, 271
RGR	271	-	-
300 Level			
AR	310	-	-
AR	311	-	-
AR	312	AR	410
AD	340	AD	440
AD	341	AD	440
AD	342	AD	442
AD	343	AD	444
ASE	360	-	-
TLZ	370	ALZ	370
400 Level			
AR	410	AR	411, 610
LAT	430	TACNAV	321
LAT	431	TACNAV	322
DEFTAC	432	DEFTAC	462
ASE	460	THRX	260, 261
ASE	461	THRX	360, 361
500 Level			
TSO	590	RQD	601
NSI	591	RQD	602
WTI	592	RQD	691
NTPSI	593	RQD	692
600 Level			
NVG	601	NSFAM	204
NVG	602	-	-
NVG	603	TACNAV	324, 223, 222
NVG	604	-	-
NVG	605	NSFAM	205
	605	RQD	600
NVG	610	-	-
NVG	630	-	-
NVG	640	AD	341
NVG	670	-	-
SAR	680	-	-
TSOCK	690	RQD	690